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Component residual life evaluation system - determines residual life
using different data with selection of shortest residual life value

Patent Assignee: HITACHI LTD (HITA)

Inventor: OHTSUKA H; UTAMURA M

Number of Countries: 003 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
DE 4008560	A	19900920	DE 4008560	A	19900316	199039 B
JP 3015768	A	19910124	JP 9064233	A	19900316	199252
DE 4008560	C2	19951102	DE 4008560	A	19900316	199548
US 5608845	A	19970304	US 90494629	A	19900316	199715
			US 93158439	A	19931129	

Priority Applications (No Type Date): JP 8963852 A 19890317

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
DE 4008560	C2		28	G07C-003/08	
US 5608845	A		24	G06F-015/18	Div ex application US 90494629
JP 3015768	A			G01R-031/00	

Abstract (Basic): DE 4008560 A

The component residual life evaluation system determines 3
respective residual life values using experimentally determined aging
data for the component characteristics and experimentally determined
aging data for the appts. function and both of these. The shorter of
the 3 obtained residual life values is selected for the output residual
life value.

Pref. the residual life calculations are obtained for a number of
individual components and for the associated appts. as a whole.

USE/ADVANTAGE - Power station. Gives clear display of remaining
life of separate parts of aggregate. (30pp)

Abstract (Equivalent): DE 4008560 C

Residual working life of e.g. a power station is determined by
determining a first residual life based, on experimental ageing data
w.r.t. the deterioration of a characteristic of at least one part of
the plant. A second residual life is determined from experimental data
w.r.t. at least one function of the plant.

An optimal residual life is derived from the first and second
residual lines. A third residual life is derived from the first and
second ageing data and from a relationship between these data. The
shortest of the three residual lives is then selected as the optimal
residual life.

ADVANTAGE - Improved reliability.

Dwg.0/19

Abstract (Equivalent): US 5608845 A

An expert system for diagnosing a remaining lifetime (L) of an
apparatus included in a plant and selecting an apparatus to be
inspected, said expert system comprising:

an external system interface for taking history data of the plant
under on line operation from an external sensor;

a terminal system for taking data including knowledge data through an input/output apparatus;

a user interface connected to said external system interface and said terminal system;

a data base connected to said user interface for managing data including the history data supplied from said external system interface and said terminal system via said user interface;

a knowledge acquire support apparatus connected to said user interface for receiving the knowledge data from said terminal system via said user interface;

a knowledge base connected to said knowledge acquire support apparatus for storing the knowledge data supplied from said knowledge acquire support apparatus; and

an inference apparatus connected to said knowledge base and said data base for diagnosing the remaining lifetime (L) of an apparatus of the plant based on said data including the history data and the knowledge data respectively stored in said data base and said knowledge base;

wherein said terminal system takes two kinds of data including:

function test data which is acquired in a function test of a constructive apparatus of the plant during a periodical check and is stored in said data base every time the periodical check is carried out, and

parts degradation characteristic data which is acquired in an accelerated lifetime test of parts of the constructive apparatus or materials of the plant and is stored in said data base,

wherein knowledge data is obtained from specification of the constructive apparatus and parts, performance, and maintenance information, or from past experience of experts concerning preventive maintenance work.

Dwg.1/19

Title Terms: COMPONENT; RESIDUE; LIFE; EVALUATE; SYSTEM; DETERMINE; RESIDUE
; LIFE; DATA; SELECT; SHORT; RESIDUE; LIFE; VALUE

Derwent Class: T05; X11

International Patent Class (Main): G01R-031/00; G06F-015/18; G07C-003/08

International Patent Class (Additional): G07C-003/08

File Segment: EPI

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